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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,696	03/03/2004	Yung-Mao Su	3167-182	4330

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EXAMINER

PAYNE, SHARON E

ART UNIT	PAPER NUMBER
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2875

DATE MAILED: 09/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/790,696

Applicant(s)

SU ET AL.

Examiner

Sharon E. Payne

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6 and 8-10 is/are rejected.
- 7) ☒ Claim(s) 3-5,7 and 11-20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claims 2 and 6 are objected to because of the following informalities: these claims are duplicative.

2. Claim 3 is objected to because of the following informalities: 1) the word "large" in line 2 is a term of degree that is not defined in the specification or claims; and 2) the word "less" in the last line should be "lesser"; 3) the word "have" should be "has" in line 2; and 4) the word "have" should be "has" in line 4.

3. Claim 7 is objected to because of the following informalities: 1) the phrase "are arranged" should be "is arranged" in line 2; and 2) the phrase "are becoming" should be "is becoming" in the last two lines of claim 7. (The word "portion" is the subject of each clause.)

4. Claims 11-15 are objected to because of the following informalities: 1) the phrase "are arranged" should be "is arranged" in lines 9-10; and 2) the phrase "are becoming" should be "is becoming" in second-to last line of claim 11. (The word "portion" is the subject of each clause.) Claims 12-15 are necessarily included due to their dependency.

5. Claims 16-20 are objected to because of the following informalities: 1) the word "large" in line 10 of claim 16 is a term of degree that is not defined in the specification or claims; 2) the word "less" in the second-to-last line of claim 16 should be "lesser"; 3) the word "have" should be "has" in line 9 of claim 16; and 4) the word "have"

should be "has" in the second-to-last line of claim 16. Claims 17-20 are necessarily included due to their dependency.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtake et al. (U.S. Patent 5,384,658) in view of Kojima et al. (U.S. Patent 5,377,084).

Regarding claim 1, Ohtake et al. discloses a plurality of lamp tubes (reference number 2) arranged at a selected interval (Fig. 4), a diffuser plate (reference number 4)

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disposed above the lamp tubes for passing a diffusing the light emitted from the lamp tubes (Fig. 4) and a reflector plate (reference number 5) disposed beneath the lamp tubes for reflecting the light emitted from the lamp tubes back to the diffuser plate (Fig. 4). Ohtake et al. does not disclose particles on the reflector plate.

Kojima et al. discloses the reflector plate having a plurality of particles (reference number 31) fabricated thereon for scattering the reflected light uniformly (Fig. 1, column 3 in lines 45-57).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the particles of Kojima et al. in the apparatus of Ohtake et al. to make the display of "greater recognition and uniform vision" See column 2, lines 50-53, of Kojima et al.

Concerning claims 2 and 6, Ohtake et al. does not disclose spherical dots. Kojima et al. discloses the particles (reference number 31) being made of spherical dots (Fig. 1). Kojima does not specifically disclose the size of the dots.

Making the dots with diameters of 5 to 100 micrometers is considered to be an obvious variation. Since the spherical dot is well known in the art, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the dots 5 to 100 micrometers in diameter to scatter light as desired to make a uniformly illuminated display, because changes in size involve only routine skill in the art. See M.P.E.P. 2144.04.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the dots of Kojima et al. in the apparatus of Ohtake et al. to

to make the display of "greater recognition and uniform vision" See column 2, lines 50-53, of Kojima et al.

9. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtake et al. in view Kojima et al. as applied to claim 1 above, and further in view of Takase et al. (U.S. Patent 5,276,600).

Regarding claim 8, Ohtake et al. and Kojima et al. do not specifically disclose a reflector coating layer. Takase et al. discloses a reflector plate (reference number 5) reflector coating layer (reference number 6) applied thereon so as to promote the reflecting efficiency (column 3, lines 55-60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the reflectance layer of Takase et al. for coating onto surfaces of the particles of the apparatus of Ohtake et al. and Kojima et al. to reflect visible light into the desired location. See column 3, lines 55-60, of Takase et al.

Concerning claim 9, Ohtake et al. and Kojima et al. do not specifically disclose a reflector coating layer. Takase et al. discloses the reflector coating layer being applied to reflect the light with the wavelength of 400 to 700 nanometers (column 3, lines 55-60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the reflectance layer of Takase et al. in the apparatus of Ohtake et al. and Kojima et al. to reflect visible light into the desired location. See column 3, lines 55-60, of Takase et al.

Regarding claim 10, Otake et al. and Kojima et al. does not specifically disclose a reflector coating layer. Takase et al. discloses the material of the reflector coating layer being chosen from the group of aluminum, silver and an alloy thereof (silver, column 4 in lines 23-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the silver layer of Takase et al. in the apparatus of Ohtake et al. and Kojima et al. to reflect visible light into the desired location. See column 3, lines 55-60, of Takase et al.

Allowable Subject Matter

10. Claims 11-20 would be allowable if rewritten or amended to overcome the objections set forth in this Office action.

Claims 3-5 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to disclose a backlight unit having the following features:

1) a portion of the spherical dots right under the lamp tubes having large (larger) diameters while the other portion of the spherical dots under two sides of the lamp tubes have less (lesser) diameters as recited in claim 3;

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2) a portion of the spherical dots right under the lamp tubes has the most large diameter, while the other portion of the spherical dots right under the central area between two adjacent lamp tubes has the smallest diameter as recited in claim 4;

3) a portion of the spherical dots right under each one said lamp tube is arranged closer together, while the other portion of the spherical dots distributed along the two lateral sides of the lamp tube is becoming farther apart as recited in claims 7 and 11;

4) a portion of the particles right under each one said lamp tube has large (larger) diameters, while the other portion of the particles distributed along two lateral sides of the lamp tubes has gradually less (lesser) diameters as recited in claim 16.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharon E. Payne whose telephone number is (571) 272-2379. The examiner can normally be reached on regular business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Sharon Payne
Patent Examiner
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